

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 03-045511

(43)Date of publication of application : 27.02.1991

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(51)Int.Cl.

C01B 33/18

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(21)Application number : 02-172844

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(22)Date of filing : 02.07.1990

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(30)Priority

Priority number : 89 8908874 Priority date : 03.07.1989 Priority country : FR

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## (54) SILICA HAVING CONTROLLED POROSITY AND ITS PRODUCTION

### (57)Abstract:

PURPOSE: To improve porosity by adding a silicate and acid to a colloidal dispersion of SiO<sub>2</sub> to prepare an SiO<sub>2</sub> suspension, lowering its pH, separating the SiO<sub>2</sub> and drying the same, thereby obtaining a specified specific surface area, oil uptake, pore volume and pore diameter.

CONSTITUTION: After 0 to 50 g electrolyte, such as Na<sub>2</sub>SO<sub>4</sub>, is mixed with the colloidal dispersion of the SiO<sub>2</sub>, 40 to 250 g silicate, such as Na<sub>2</sub>SiO<sub>3</sub> (weight ratio of SiO<sub>2</sub>/Na<sub>2</sub>O is 2 to 4) as S<sub>in</sub>, and the acid, such as H<sub>2</sub>SO<sub>4</sub>, are simultaneously added and mixed at 60 to 95°C to and with this suspension while its pH is maintained at 8 to 10. Next, an inorg. acid, such as HNO<sub>3</sub> or HCl, or CO<sub>2</sub> is blown thereto to lower its pH to 3 to 7, by which the SiO<sub>2</sub> suspension having a concn. of 40 to 80 g/l as SiO<sub>2</sub> is obt. The settled SiO<sub>2</sub> having a BET specific surface area of 20 to 300 m<sup>2</sup>/g, a CTAB specific surface area of 10 to 200 m/g, oil uptake of 80 to 400 cm<sup>3</sup>/100 g, pore volume of 1 to 10 cm<sup>3</sup>/g and average pore volume of 10 to 50 nm is obt. by separation from this suspension by vacuum filtration, etc., then washing with water and acid, followed by drying.